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The EXTENSION ANIMAL HUSBANDMAN

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UNITED STATES DEPARTMENT
OF AGRICULTURE
WASHINGTON,
D.C.

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THE EXTENSION ANIMAL HUSBANDMAN

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K. F. Warner, Senior Extension Meat Specialist.

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4-H CLUB MEMBERS FINISH FEEDER LAMBS FOR MARKET

By I. B. Johnson, Extension Animal Husbandman,
South Dakota State College.

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The fattening of western feeder lambs for market is another practical 4-H livestock project carried on by 4-H club members in the livestock feeding sections of South Dakota. Since its inception in 1934 it has proved popular with the older 4-H club boys and their parents for in conducting this project the members feed lambs for the winter market under practical farm conditions such as Dad would pursue in finishing a carload or more of western feeder lambs. The project involves the fattening of 15 head of feeder lambs and is thus of sufficient size to appeal to the older boys. Through the close supervision of the work by the county agents and the local club leaders the members are afforded a most splendid opportunity to learn the business of successful lamb feeding. The project fits nicely into western Corn Belt farm plans and one year with another the 4-H member may look forward to a profit on his lamb feeding activities, if the feeder lambs are bought judiciously and fed with care.

The lamb feeding project was first started in the irrigated sections of Butte and Lawrence counties in South Dakota under the leadership of the superintendent of the U. S. Experiment Farm at Newell and the county agents for these two counties. Six boys enrolled the first year, starting their lambs on feed in September and feeding them for 106 days until they were finished for market. During the feeding period the lambs were weighed regularly each month at the time the local club leader or the county agent called upon the member to check his work. Detailed records were kept of the feed consumed and the monthly gains obtained. The local banks cooperated in financing the project. Provision was made for a mutual insurance to protect these 4-H feeders against death losses in the lambs. The lambs all brought the top of the market when sold.

The success of this first undertaking in more extensive lamb feeding on the part of 4-H club members led to the development of this type of club in the eastern portion of the State the following year. In the fall of 1935 there were 100 South Dakota and 6 northwest Iowa club members who enrolled for this project. The market interests at the Sioux Falls livestock market realized the possibilities of such a project in creating a greater interest in lamb feeding throughout the Sioux Falls trade territory and cooperated by financing

a 4-H fat lamb show at which the members might exhibit their season's achievement, compete for cash prizes, and dispose of their fat lambs at the auction following the show. In spite of a curtailed feed crop throughout the Sioux Falls territory in 1936 there were 136 members enrolled in the project in its third year of operation, including not only members in eastern South Dakota but also members in northwestern Iowa and southwestern Minnesota.

The project is open to any boy of 4-H club age. In order to be eligible for the project each member's application, which is also signed by his father or guardian, has to be passed upon favorably by the local 4-H club committee, consisting of the county agent, the local 4-H club leader and a local banker. The member must have sufficient feed on hand to fatten the lambs properly for the January market; he must arrange for the purchase of his feeder lambs, must secure them, and have them ready to start on feed on or about October 1; and the lambs must be ear-tagged by October 15, as a means of identification at the time of the fat-lamb show.

If the purchase of the feeder lambs is financed by a local bank or other agency, it is advisable to set up a protective fund against any loss of lambs through injury or death during the feeding period. As the county is generally regarded as the unit in which such a fund applies, usually the members in each county set up their own fund. Each member financed contributes 5 percent of the delivered cost of the feeder lambs to this protective fund, and if at the end of the feeding period there still remains a balance in this fund, it is pro-rated back to the members who contributed to it in proportion to the amounts originally contributed by them. Those members in a county who finance their own purchases may also contribute to the fund and share in its protective features.

Briefly the regulations governing the project are:

1. The project is limited to older boys of club age, under 20 years of age. A club shall consist of five or more members and a local leader.

2. Every member will receive a manual of instruction and program and record book from the State College Extension Service covering the care, management, and feeding of the lambs.

3. Enrollment closes October 1 and all lambs must be on feed by October 15. The project closes when lambs are sold or at least by March 1.

4. The lambs will be ear-tagged and marked before October 15, after which no substitutions can be made.

5. The lambs are to be weighed each month and the weights recorded.

6. Every member does his own work, follows instructions, keeps records, and makes the necessary reports to the county agent or leader as required.

7. All the 15 lambs are eligible to show at a local or county show.

8. A pen of 10 lambs and an additional individual lamb may be exhibited at the Tri-State 4-H Fat Lamb Show and Sale held in January. Only those pens selected at the county contests will be eligible to show at Sioux Falls.

The feeding period extends from October 15 to the latter part of January when the Tri-State Fat Lamb Show and Sale is held at the terminal livestock market at Sioux Falls, South Dakota. At the show two classes, a lightweight class and a heavyweight class are offered the exhibitors for both pens of fat lambs and individual fat lambs. Suitable cash premiums are awarded the pen classes but for the individual classes only ribbons are awarded. On the last day of the show all the lambs are sold at auction and the returns are made to the 4-H exhibitors through the stockyards company.

One of the outstanding features of the show and the project is the fact that not only are cash premiums awarded for the best finished lambs, but the 20 highest ranking club members in the project are also recognized. The basis for rating the members is as follows:

1.	Gain in weight of lambs	20%
2.	Economy of gain shown by record book	20%
3.	Place in the show ring	20%
4.	Record book and reports	25%
	Completeness	10%
	Accuracy	10%
	Neatness	5%
5.	Part taken in meetings	15%
	Attendance	10%
	Activities	5%
	Total	100%

Therefore it is not only important for the members to have well-finished lambs, but the lambs must show good daily gains made at lowest possible cost; and the members must keep accurate records and take an active part in their local club.

Completions in this project have been 100 percent with 97 percent of the members exhibiting at county shows or the Tri-State Show. The members who did not exhibit their fat lambs may have decided to market them prior to the show on account of their weight or their highly finished condition. While the member starts with 15 feeder lambs, he has the privilege of sorting out a pen of 10 lambs for the show; this permits him to market the sort-off lambs through the regular market channels and thus offer a pen of fat lambs of more uniform conformation, finish, and quality for the show and sale.

The feeding and finishing of 15 lambs so as to make the greatest returns on the enterprise are a task that is very interesting and will challenge the best efforts of any 4-H club boy. For this section of the Corn Belt, the three years in which the project has been conducted have emphasized the importance of confining the lambs to be fed to western feeder lambs, thus excluding natives. Experience also brings out the fact that a different basis of awards for pens should be set up for a fat-lamb show. It has been proposed to grant the cash awards on the basis of the number of Choice fat lambs included in the pen. On such a basis the judges at the show would be required to grade the lambs according to finish and quality in both lightweight and heavyweight classes. The Choice fat lambs could be marked with a blue chalk; those grading Good with red chalk; the Medium lambs with yellow chalk; and those lambs still on the feeder order could be marked with green chalk. At the sale the pens of lambs could then be sold on the basis of grade. The prices paid for the pens of lambs would then reward each member equitably in proportion to the kind of a job of feeding he conducted.

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IOWA QUALITY LAMB PROJECT

The "Quality Lamb" production program ended its first year with lamb-grading and marketing days held in the 10 southeastern counties of the State which participated in the work. Over 2,100 lambs were handled in these events. One thousand and thirty-five lambs were graded and sold direct to the packers, according to the grades given them. An additional 375 lambs were returned to the farms because they were too young and too light for sale. --From Iowa Annual Report, 1936.

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Baby-beef clubs were conducted in every county in Iowa in 1936. A total of 5,832 baby beeves and 486 purebred beef heifers were included in such 4-H projects.

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IMPROVING CALF CROP PERCENTAGES

By E. F. Rinehart, Extension Animal Husbandman,
Idaho Extension Service.

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While demonstrations play an important part in all forms of livestock extension work, they are of especial value in connection with range livestock. With farm livestock the demonstration usually is a means to spread the use of approved practices. With range livestock the majority of the demonstrations may be in unknown and unexplored fields for the purpose of educating the extension specialist, as well as the stockman.

Calving and lambing percentages are subjects involving many factors. Actual counts in random flocks and herds give fairly accurate averages. In most cases the percentages seem lower than they should be. In working closely with cooperating outfits, methods of improvement are sometimes discovered.

Different range areas vary greatly in altitude, topography, soil, watering facilities, spring and fall pasture, and winter feed. Therefore, a general system of range management cannot be recommended. On some Idaho ranges the most profitable system of operation is on a cow-and-calf basis. On many other ranges the production cost of a calf to weaning age is higher than its market value. In these sections calving percentages are low. Part of the ranges are steep and difficult of access, but the summer feed is lush and nutritious, so that dry cows and older steers and heifers which go direct to market as grass-fat cattle are indicated. Cattlemen so situated realize that they have a better steer than a cow-and-calf range and are competitors of the cattle feeders for weaner calves.

Whichever system is followed, it is necessary to obtain and save a high percentage of calves. Sufficient cattle must be sold to pay operating expenses. The dry cow that consumes winter feed and summer range is a useless parasite. Feed bills, taxes, grazing fees and other operating expenses must be paid from the sale of the offspring of productive cows.

In extension activities carried on with 150 cattle outfits, with special attention to management and marketing problems, wide variation in the number of calves born and saved was found to exist. Among the 150 herds studied, 31 were in a low altitude where two systems of breeding prevailed. In this section, part of the outfits followed year-long, others seasonal breeding. In the seasonal breeding

the bulls were taken to the range on June 15th, resulting in all calves being born the following spring. In the system of year-long breeding the bulls were with the cows the year around. Each system has strong backing. In order to determine the relative returns over a period of years from the two systems, records and results of the calving percentages, weights and financial returns of those following each system were kept. This was done as a sub-project under the main project covering the entire cattle areas which dealt with cost of production and relative returns secured by marketing cattle of different ages. Three years' results appear as follows:

Year	YEAR-LONG BREEDING				SEASONAL BREEDING			
	No. outfits	No. breeding cows	No. calves branded	Calf crop percentage	No. outfits	No. breeding cows	No. calves branded	Calf crop percentage
1932	14	1,384	941	68.0	17	2,900	2,172	74.9
1933	7	1,106	793	71.7	12	1,662	1,257	75.6
1934	9	1,459	1,076	73.7	10	1,371	1,038	75.7
3 yrs.	30	3,949	2,810	71.2	39	5,933	4,467	75.3

It will be noted that the results are for years when conditions were normal. During the ten years that the main project has been continued, the calf crop from approximately 60,000 range cows has varied from 57 to 78 percent. The lowest of any year was in the spring of 1935, following the drought of 1934, when percentages ranging from 35 to 50 percent were common. Some of these herds had double the calf crop the following year. In 1935 one large outfit branded a 47 percent calf crop. In 1936 the same outfit saved an 82 percent calf crop. Recently a 93 percent calf crop was branded in an outfit having slightly more than 100 cows. Naturally, such high counts were obtained by herds that were abortion free, had followed the practice of culling all dry cows and also of calving on a sheltered range, with sheds and box stalls available.

The culling of dry cows is naturally one factor that affects the increased calf crop of those that follow seasonal breeding. A second factor is that more care and attention can be given to the herd. These two important factors combine to make the practice of seasonal breeding more desirable. More calves are always born than are branded. Losses of newly born calves are heaviest in herds which follow the practice of year-long breeding. In periods of long, hard, severely cold and stormy weather, as high as 21 percent of the calf crop has been found dead on frozen bed grounds.

Many cows are shy or non-breeders. Depending largely on the range and winter feeding of the herd, many cows have calves only every other year. In year-long breeding some cows may never have calves. In seasonal breeding it is possible to ride through the herds in February and cut out all that do not appear to be heavy with calf. There is yet time to put them into the feed lot and finish for the spring market before grass-fat cattle are numerous. Incidentally, it may be stated that mistakes may be made for some calves may show up later in the fattening pens. These may be cut back, with their mothers, into the breeding herd with no harm done.

A third advantage of the seasonal breeding is the uniformity in age of the offspring. This affects the financial returns, though not necessarily the calving percentage. In herds which follow the practice of year-long breeding, steers are uneven in age and size and sell at a discount, thus lowering the returns.

This, like other projects, may not only change the practice of stockmen but also some extension policies. Before this project was well under way we recommended strict culling on type. This was, and still is, an important part of the year's marketing system. However, the first and most important culling is to get rid of the shy and non-breeders. In order to hold back the best individuals in years following drought or an unfavorable breeding season, an identifying ear mark is used. Culling on the basis of shy breeding, with age the second consideration, and type the third is proving to be the most logical method in our program.

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THE LURE OF LIVESTOCK

I think I could turn and live with animals. They are so placid and self-contained. I stand and look at them long and long. They do not sweat and whine about their condition. They do not lie awake in the dark and weep for their sins. Not one is dissatisfied; not one is demented with the mania for owning things. Not one kneels to another nor to his kind that lived thousands of years ago. --Walt Whitman.

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Missouri county agents' reports for 1936, show that 43 hog-feeding demonstrations were completed, 1,204 movable hog houses built, 2,396 registered boars purchased and 6,195 farmers practiced some method of lice and mange control. Also that 37,661 farmers used such protein supplements as tankage, milk, linseed meal, and soybean meal in a fattening ration for hogs, while 28,572 farmers used commercial feeds to balance their fattening rations.

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Next to the originator of a good sentence is the first quoter of it. --Emerson

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A KENTUCKY HAM SHOW

By Grady Sellards, Field Agent in Animal Husbandry,
Kentucky Extension Service.

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The best ham in Kentucky was worth $100 in 1936. In fact, it sold for more than that price in the auction at the conclusion of a show held in connection with an exposition featuring numerous other exhibits, such as cookery and handwork of various kinds.

In response to advertising by radio and press, and a letter sent to a mailing list of 2,500, one hundred hams were sent in for exhibition.

Cash premiums totaling $1,000 were offered. This amount, although underwritten by the owner of a chain of grocery stores, was provided by the proceeds of the sale of all hams receiving awards. With such a generous fund for premiums, it was possible to distribute the premiums so that no award would be less than the value of the ham. Hence the requirement that all prize-winning hams become the property of the sponsors of the show was agreeably received. It was further provided that all hams not winning prizes could either be sold in the auction (after the sale of all the prize-winners, of course), or returned to their owners. In the auction, the chain-store operator bought all but three of the hams, and paid a total of $1,350 for them, selling them afterward through his stores.

Since the hams were required to be sold, a minimum of sampling was possible. Any sampling, in fact, had to be done in such a manner as not to mar appearance or slicing value. This was accomplished by removing a small plug from each ham. Examination of this sample enable the judges to ascertain flavor, proportion of lean to fat, color, marbling and texture, and degree of softness. Flavor, proportion of lean to fat, color and trim are the characteristics of paramount importance. Degree of softness, too, has a direct bearing upon edibility - the softer the lean portion of the ham, the more of it is edible.

The suggestions of Professors James E. Comfort, of the Missouri College of Agriculture, and Roy W. Snyder of the Texas A. and M. College, supplementing our limited information on cured-meat shows were invaluable. The plan of Professor Snyder of holding county shows, followed by district shows seems excellent. The score-card used was provided by Professor Comfort and is a valuable aid in judging cured-meat shows.

The selling of all prize-winning cuts of meat, at the conclusion of a cured-meat show assists much in enlivening interest. As prospective bidders for the products, grocery, hotel, and restaurant operator should be invited. Prize-winning meat products on display and for sale may be an asset to all these businesses.

Another feature of the Kentucky show was that with each entry the method of curing had to be furnished, along with details of handling and storage. Some of the methods used make valuable contributions to the information on the subject.

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HOW WEST VIRGINIA DOES IT

By Benj. F. Creech, Extension Animal Husbandman,
West Virginia University.

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In response to a request for an article giving some details regarding our West Virginia animal husbandry extension program the following is offered. We realize that the livestock industry of West Virginia is relatively small and that therefore our efforts cannot have as large a mass effect as would be possible in some other States, but perhaps the methods we use would be of interest.

The philosophy of the West Virginia program is difficult to describe but has its being in the 25 or 30 well-trained and loyal "livestock" county agents who are devoted to the program. To work with these county agents is a pleasure, and in doing so the program and the philosophy behind it unfolds itself.

These county agents and a number of the cooperative-minded livestock men of the State had a part and responsibility in developing the program. The present program was evolved after about ten years of hard work which brought plenty of experience.

In preparation for each year's activities a "Blue Book" is issued just prior to the annual livestock conference and livestock improvement campaign. This "Blue Book" contains program outlines, subject-matter information, extension teaching material, and statistical reports of the accomplishments of previous years.

Our twelfth annual livestock conference was held this spring to which all field workers, including county agents and officials of livestock marketing organizations were invited. At this conference new subject matter material was presented and policies and programs for the livestock improvement campaign discussed. Each worker that goes into the field on the campaign must tell the same story and have the same philosophy of the program.

These livestock improvement campaigns that are put on in approximately 30 of the best livestock counties each year set the stage and prepare the seed bed for the program to follow. Each year the campaigns have been reaching from four to five thousand stockmen through field meetings and demonstrations. It is in these meetings and demonstrations that they have an opportunity to get a clear picture of the aims of the program and its plan of operation.

Livestock and wool marketing, purebred-bull shows and sales, purebred-ram sales and feeder-calf shows and sales are tied up closely with the production program. These marketing activities have very largely been the proving ground for our production program. We aim to base our production program on practices which prove their worth by increased market returns.

The beef-cattle program in West Virginia is largely a breeding program and the annual purebred bull show and sale that is held the last of April each year has made its contribution in the manner of making better sires conveniently available.

In wool marketing we assist in the grading program of the West Virginia Wool Marketing Association. This association markets annually direct to broker or mill approximately a half million pounds of medium wool for 4,000 sheepmen. The clear medium wool this year was sold for 48.81 cents per pound and the total marketing cost to the producer was 1 cent per pound. The wool is usually sold between March 15 and April 15 and taken up and delivered to the purchaser during the month of June. The wool is received at local association concentration points and the reject wool taken out and shipped direct, which eliminates a very large overhead expense.

A series of purebred ram sales are held under the auspices of the West Virginia Purebred Sheep Breeders' Association each year. These follow the wool marketing activity. Approximately 300 good purebred rams are sold annually in these sales. None but approved rams are accepted and the use of such rams has been reflected in the increased quality of the lamb crop.

The annual feeder-calf shows and sales held in the fall are an integrate part of the beef-cattle program. In these events from 700 to 800 high-quality feeder calves are graded, shown and sold at public auction. These shows and sales have done much to stimulate interest in better breeding. At the State feeder-calf show and sale held at Jackson's Mill only the very best calves from the State are permitted to enter. All these calves are inspected on the farm

before the show and only the calves that are adjudged to grade Choice or Fancy are accepted.

The program for grading and marketing lambs cooperatively direct to the packer which has been followed the last three years has been enthusiastically accepted by the sheepmen. This program was started in 1935 when about 24,000 lambs were graded and sold direct; in 1936 about 36,000 lambs were similarly handled. This year approximately 75,000 lambs will be graded at concentration yards and sold cooperatively direct to packer.

This program of grading and selling lambs direct has furnished our extension workers with a well-equipped laboratory for teaching the value of better production practices.

West Virginia is well organized with county and regional livestock marketing associations and these are affiliated into a State association. The State association has a financial interest in the Pittsburgh and Eastern Producers' Livestock Commission agencies and clears all livestock marketed through one of them, depending upon its origin.

All local livestock associations which market lambs direct have covered yards and are equipped with self-recording beam scales which are kept in good order.

The State association directs the general marketing policies and acts as a clearing house for all member associations. A trademark has been registered for the protection of all lambs officially graded. Lambs grading Prime and Choice are marked with a blue stripe down the middle of the back and are designated as "blue" lambs. Lambs grading Good are marked in like fashion with a red mark and designated as "red" lambs. Medium lambs are marked with a yellow stripe and called "yellow" lambs and common and cull lambs are marked with a yellow stripe across the rump and are designated as "C.C's".

All lambs are sold at concentration yards with a 4 percent shrink and loaded on car by the marketing association. Packers state that they prefer to buy well-graded lambs and the West Virginia sheepmen certainly like the idea of selling on grade instead of on averages.

The State Department of Agriculture cooperates in furnishing official graders for lambs and wool. If, and when, the time comes that all livestock commodities are sold on a grade basis, it will make the job of the extension worker in animal husbandry an easier and more satisfactory one.

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PERSONNEL NOTES

Hawaii

Paul A. Gantt was appointed extension animal husbandman effective May 1, 1937, vice L. A. Henke who will do station administrative work since returning from a European trip.

Maryland

Kenneth A. Clark, manager of Monocacy Farms at Frederick, Md., for the past three years, has returned to the University where he was formerly the extension animal husbandman. Mr. Clark will devote one-third time to extension work.

Montana

I. M. C. Anderson, extension animal husbandman for the past five years, has resigned to accept the position of district extension agent in the Alaskan Extension Service.

Nebraska

Ross H. Miller of the animal husbandry department was assigned to extension duties during the past summer.

New Mexico

Wm. H. Tolbert, former county agent at large, has been appointed extension animal husbandman succeeding W. L. Black, resigned.

North Carolina

W. W. Shay, for 20 years swine extension specialist, died on April 26, after a long illness.

North Dakota

George J. Baker, for many years extension animal husbandman, was appointed acting extension director in August. James Gannaway of the animal husbandry department helped in conducting sheep extension work during the past summer.

South Dakota

On July 1, I. B. Johnson, extension animal husbandman, was put in charge of the animal husbandry department of the college. For the next year Mr. Johnson will devote one-half time to extension, one-quarter to research and one-quarter to resident teaching.

Guy McDonald, an animal husbandry graduate of the South Dakota State College and former county agent in Brookings County was appointed assistant extension animal husbandman, effective July 1, 1937.

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HORSE PARASITE CONTROL IN MISSOURI

The most concentrated efforts to effect the progress of the horse parasite control project are made each year during November, December, and January. Usually all owners cooperating have had their stock treated with carbon disulphide by February. During that season of last year 16,529 owners in 92 counties had 70,499 horses, mules and colts treated by 217 local practicing veterinarians. The actual cost to owners for having the carbon disulphide administered was $27,725.49 or an average of 0.379 cent per head. The actual cash returns from that expenditure cannot be determined but most owners feel that the value of the work is far in excess of the cost.

The project plan calls for organization in individual counties by county agents. Township or school district leaders, or both, are used by agents to assist in securing the cooperative interest of work-stock owners. This arrangement is quite effective in bringing about the progress of the program and in some counties a large percent of all owners are cooperating each year. The services of local veterinarians are secured to administer the carbon disulphide treatment. In addition they examine the mouths of animals which they treat and dress the teeth when needed. Extension specialists in animal husbandry, entomology, and veterinary science provide both technical and nontechnical information concerning the subject.

The number of local leaders used varies in individual counties, but usually one leader is assigned to each school district in which interest is shown. County-wide organization meetings are held and these are followed by the district meetings. In the county-wide meetings the subject matter is handled by extension specialists in veterinary science or animal husbandry, or both. Usually slides, film strips, charts, and specimens are used.

Circular letters and news articles serve to announce meetings and to provide information on specific phases of the project and the general parasite problem. Proof to be established includes the general gain and improvement of animals receiving treatment and the effectiveness of carbon disulphide in removing bots, large intestinal roundworms and stomach worms.

--From Missouri Annual Report, 1936.

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AMERICAN SOCIETY OF ANIMAL PRODUCTION

The regular annual meeting of the above organization will be held at Chicago, Ill., November 26 to 28, 1937. As usual there will be a section devoted to extension work, the program for which promises much to workers in this field. Plan now to be there.

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THE CURRENT FEED SITUATION

The supply of feed grains per consuming animal this year may be the largest in more than 15 years. The total production of the four feed grains -- corn, oats, barley, and grain sorghums -- will exceed 100,000,000 tons if yields are as high as were indicated by the August 1 crop report. The output will be slightly larger than the 1928-32 average, and about two-thirds larger than the very small production last year. With livestock numbers more than 10 percent below average, the supply of feed grains per grain-consuming animal will probably be larger than in any of the past 15 years with the possible exception of 1925-26 and of 1932-33. Supplies per animal will be unusually large in some of the Corn Belt States, where livestock numbers have been greatly reduced.

Total supplies (production plus carry-over) of feed grains in each of the past 3 years have been below the 1928-32 average of 108,000,000 tons. In 1934 the total supply was 66,000,000 tons, in 1935, 97,000,000 tons, and in 1936, 72,000,000 tons. The large stocks of feed grains that accumulated during 1931-32 and 1932-33 were practically exhausted at the close of the 1934-35 marketing year as a result of the drought. A severe shortage of both feed grains and hay in 1934 was accompanied by a sharp reduction in practically all classes of livestock. While feed grain production in 1935 was again somewhat below average, supplies per animal were ample. The severe drought in 1936 again greatly reduced production, and total supplies of feed grains per animal for the 1936-37 marketing year were not greatly different from those of 1934-35. The past severe winter over much of the important livestock feeding area, together with higher livestock prices, stimulated the demand from feeders and resulted in a relatively rapid rate of disappearance of all feed grains. Stocks of feed grains, especially corn, were at very low levels on July 1.

Total 1937-38 supplies of hay, including May 1 stocks and the 1937 production of tame and wild hay as indicated on August 1, will amount to about 90,900,000 tons, 8 percent larger than last year, and about the same as the 1928-32 average. While this amount is about 4 percent smaller than the total supplies in 1935-36, there has been some decline in hay consuming animal units during this period. The supply of hay per animal is probably about the same as 2 years ago, when it was the largest since 1929-30.

The total acreage of soybeans was estimated on August 1 at 6,049,000 acres, or about 600,000 acres less than in 1935, but 7 percent larger than in 1936, and more than double the 1928-32 average. This acreage, together with the prospective high yield, would indicate a considerably larger production of beans than last year, if the percentage of the crop threshed is as large as for the past 2 years. --Bureau of Agricultural Economics, U. S. Department of Agriculture.

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COTTONSEED OIL FOR STORING CURED MEATS

Cottonseed oil has been found very valuable in storing meat after it is cured. Experimental tests started at the Lubbock Experiment Station in 1932 under the direction of Fred Hale, chief in swine investigations, conclusively showed that cottonseed oil was one of the most ideal methods of storing meat on the farms in Texas.

The method has the following advantages:

1. Retards mold growth 100 percent
2. Reduces shrinkage and extreme hardness
3. Prevents loss from flies and skippers
4. The oil being a liquid enables the user to return partially used pieces to the oil for perfect keeping

On an average it requires about 2½ gallons of oil to cover 100 pounds of cured pork. Recommendations are to use only refined oil but experimental information relative to the crude oil is being developed and will be released soon.

The refined oil in Texas cost from 80 cents to $1.00 a gallon in 1936. While the initial cost may appear to be somewhat high the same oil may be used three or four years, in fact some farmers have used it six years, refining it slightly each time before using.

Results of using this method for storing home-cured meats have saved Texas farmers many thousand pounds of meat usually lost from mold and skippers. County-agents' reports indicate that there are from two to forty users of oil in practically every county in the State and the practice is rapidly being adopted by other farmers.

The following excerpt from an agent's report indicates the trend and satisfaction from using cottonseed oil for storing meats:

> "The use of cottonseed oil for storing cured pork has proved one of the most talked of and best-liked demonstrations we have attempted.
>
> We pooled the farmers' needs for this oil and ordered it in barrel lots thus effecting a saving for them and assuring the use of oil of the desired quality.
>
> Seven of the eight farmers who tried it last year are repeating again this year, and six new ones are trying it for the first time. Just to give an idea of the popularity of this method we had three farmers try it in 1934, eight in 1935, and fifteen in 1936."

--From Texas Annual Report, 1936.

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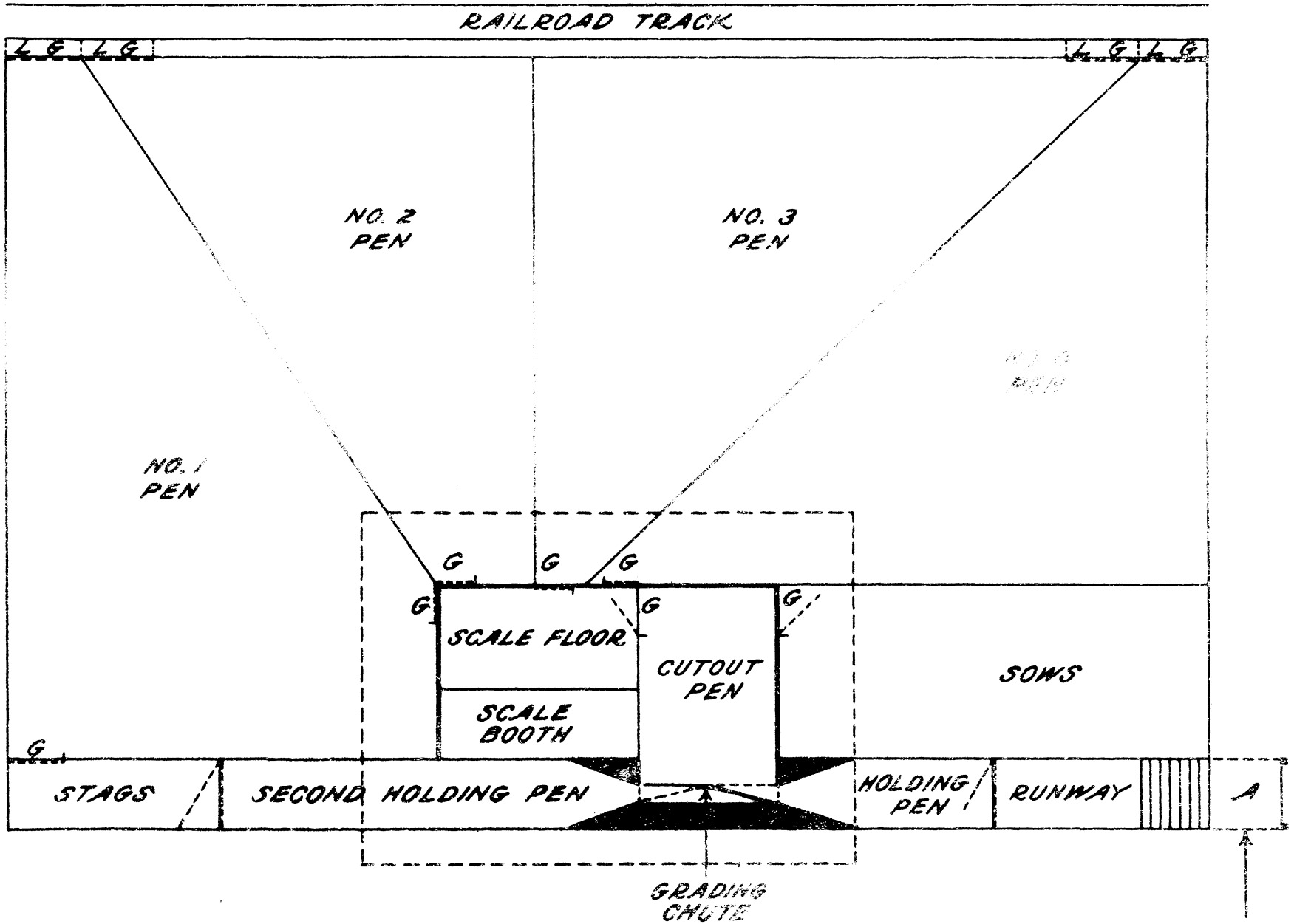
HOG GRADING YARD



THE FARMER

"The farmer transmutes the raw elements of the earth into materials of food and clothing. If the receipts from these materials are too small, he is obliged to live on the capital of nature if he remains on the land--to mine his potash and phosphorus and to sell it or waste it. This has been the case in the long history of civilization.

"The farmer must be able to maintain a standard of living equal to that of other men; anything less than this means an ignorant yeomanry, impoverished soil, and headlong haste on the road to ruin."

--Liberty Hyde Bailey, in "The Harvest."

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METHOD OF USING HOG GRADING EQUIPMENT SHOWN ON OPPOSITE PAGE

1. Wagons or trucks are lined up in direction of arrow on diagram. The first vehicle is driven past unloading chute A. Unloading chute (hinged to runway) is lowered back of vehicle, and is held up by two legs hinged to bottom of it.

2. Vehicle is backed to position indicated by dotted line and hogs are unloaded directly into runway.

3. The first load is driven into holding pen and graded while the next consignment is being unloaded.

4. The hogs are driven toward the grading chute and no. 1 hogs are permitted to pass into cut-out pen through grading gate by holding it in position shown in diagram. All other hogs are permitted to pass into second holding pen by allowing second grading gate to remain in position shown. Hogs of questionable grade may be held back in cut-out pen until No. 1 hogs are weighed, marked and turned into no. 1 pen. They then are driven on scale and weighed and turned into no. 1 pen or retained and weighed with no. 2 hogs and then turned into no. 2 pen.

5. As soon as cut-out pen is vacated, hogs are driven from second holding pen towards grading gates, which are placed in reverse of position shown on diagram, while no. 2 hogs pass into cut-out chute and remainder into the first holding pen.

6. The remaining hogs are graded as previously cited, while the hogs from the next wagon or truck are collected in runway.

7. The dotted line around scale house, etc., represents the line of the roof, which covers the greater part of the work center.

8. Loading gates (L.G.), hinged to fence at bottom, serve as runways into railroad cars, which may be loaded according to grade, if desired.

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QUALITY OF ROUGHAGES INFLUENCES ECONOMIC UTILIZATION

By E. O. Pollock, Extension Hay Specialist,
United States Department of Agriculture.

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Hay, pasture, and silage crops are, by far, the cheapest sources of digestible nutrients for our forage-consuming livestock. In view of this fact, these crops merit much more careful consideration than they have generally received in the past. Economic production of livestock and livestock products demands an abundance of hay, pasture, and silage of the highest quality obtainable.

The present trend in agriculture is toward more grasses and legumes and less grain. This trend is being encouraged by various Federally sponsored conservation and adjustment programs. A general improvement in the quality of forage will permit the livestock of the nation to be fed more economically by reducing the amount of grain and high-protein concentrates of the animal ration and increasing the roughage portion of the ration. Increased production of grasses and legumes will also result in better farm-management practices in that a large acreage of land now devoted to the production of soil-depleting crops will be utilized for growing soil-conserving and soil-building crops.

Grasses and legumes appear to be the logical buffer crops in a program designed to conserve soil fertility and to feed livestock economically. Unless, however, steps are taken to improve generally the quality of roughages there is danger of having an oversupply, especially of low-grade roughages. In an effort to consume the oversupply, farm animals might be increased so as to throw animal numbers out of balance with needs.

Present numbers of livestock could profitably consume more high-quality roughage and less grain per animal unit at a material saving in cost of production. The general improvement of the quality of roughages to make them more nutritious and palatable appears to be one of the best solutions to the problem of economic consumption of those crops. It is unfortunate that the quality of roughages is usually poorest in those areas where an expansion of the acreage appears to be needed most. The quality of forage crops in some States is so poor that no appreciable increase in consumption per animal unit may be expected until the quality is improved.

There is a marked variation in the quality of forage crops. Certain physical characteristics of roughages that reflect feed value

are influenced by production practices. Generally speaking, good-quality roughage is roughage harvested at the proper stage of maturity, that has a high percentage of natural green color and relatively fine soft pliable stems, that is sound and sweet and in the case of legumes that has a high percentage of leaves clinging to the stems. Roughage of this quality is much more palatable and nutritious than roughage that does not possess these characteristics.

The success of any program for the improvement in the quality of roughages will, to a large extent, depend upon the support given it by extension workers. An expansion of the grass and legume acreage is not likely to be productive of best results unless, through organized programs of educational work, the farmer is taught how to most economically produce and utilize those crops.

A properly coordinated, long-time forage program would include extension, research, and resident teaching and would be conducted by the departments of animal and diary husbandry, agronomy, agricultural engineering, and agricultural economics.

The writer will gladly render every assistance possible to extension workers in the matter of developing programs of educational work for forage, in supplying type samples of hay for extension work, and in giving hay quality demonstrations and discussions before groups of extension workers, livestock feeders, and others.

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STATISTICAL RESULTS OF COOPERATIVE EXTENSION WORK

The following statistics are taken from Extension Service Circular 266 "Statistical Results of Cooperative Extension Work, 1936," which is obtainable from Extension Service, U.S. Department of Agriculture, Washington, D. C.

Percentage of Agent's and Specialist's Time Devoted to Animal Husbandry Projects

1932	1933	1934	1935	1936
6.8	5.5	11.6	9.0	7.0

Animal Husbandry Extension Work with Boys and Girls, 1936

Kind of stock	No. boys enrolled	No. girls enrolled	No. boys completing	No. girls completing	No. animals involved
Beef cattle	30,476	3,363	22,362	2,675	31,684
Sheep	17,288	2,694	13,089	2,182	52,530
Swine	83,596	3,509	51,385	2,586	112,718
Work stock	7,252	469	5,441	359	5,701

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MINNESOTA SOW-TESTING PROJECT

The object of this project is to impress on producers the importance of selecting breeding stock from litters that best respond to feed. Enrolled in this project were 80 selected farmers.

During the farrowing season of last spring many local roads were impassable. It was impossible for county agents to get to many of the farms to mark or weigh the pigs. Many farms have no scales and hence accurate weights are not obtainable. A start has been made, however, to mark all the litters and follow them to 6 months weight.

Reports from 18 farmers were obtained giving litter weights at 56 days and 180 days of age. Reports from others that did not weigh the pigs state that they are selecting breeding stock from the heaviest litters just from observation. The litters were all marked and could be identified. Following is a typical report of a small herd:

	No. of pigs weaned	Weight at 56 days Pounds	Weight at 180 days Pounds
1st sow	8	322	1,299
2nd sow	2	70	123
3rd sow	8	320	1,270
4th sow	7	275	1,121
5th sow	7	280	1,171
6th sow	10	570	2,305

If selection of stock is made on the record of performance for a number of years, farmers can develop a herd that will make better use of feed and make more profit.

Observations so far indicate that the best milking sows produce the heaviest pigs at 56 days of age. The heaviest pigs at 56 days were, in most cases, the heaviest at 180 days.

An outline of the Minnesota sow-testing project may be found in the September, 1936, issue of "The Extension Animal Husbandman."

--From Minnesota Annual Report, 1936.

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TRUE SPORTSMANSHIP

"The sportsman always plays the best he can,
Less than his best would be unjust and mean.
With honest zeal he meets his fellowman,
And prizes most a record that is clean."

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COOPERATION AND PROGRESS

Cooperative mindedness is an asset in the conduct of any large public enterprise. Lack of this quality retards the progress of many worthy undertakings and increases their cost. Why are some persons such excellent cooperators while others tend strongly toward the individualistic? While other factors undoubtedly have an influence, it is believed that heredity plays an important part in the willingness of persons to work together. Most human beings possess cooperative traits to a degree comparable with the herding instinct of many lower animals. In such animals this tendency appears to be inherited to a degree noticeable in breed characteristics. It is well known that breeds of fine-wool sheep, such as the Rambouillet, possess the herding instinct to a greater degree than the mutton breeds such as the Shropshire.

By this cooperative tendency in humans is meant the desire to work with, or at least go along with the great majority. The hermit is an extreme example of the lack of this quality. The type of cooperation deemed especially desirable in the carrying on of large public programs has these qualities:

It is intelligent, recognizing the technical soundness of the project.

It is public spirited, subordinating self interest to the common good.

It is courageous, signifying a willingness to carry on even against odds.

It is optimistic, having full confidence in ultimate success.

--From address of Dr. John R. Mohler
at New York City, July 7, 1937.

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MAKING THE MOST OF PICTURES

Good pictures are an asset to any extension worker, but when a number of them are arranged in sequence and placed on a film strip their usefulness is greatly increased. It is not difficult to organize pictures into film strips nor does it take a lot of time and money.

Prices are 15 cents for each picture, chart, map, subtitle or other type of illustrative material used, if the work is done through the Extension Service of the U. S. Department of Agriculture. This pays for the negative and one positive print. A series of 40 illustrations could, therefore, be made up for as little as $6 for the negative and one print.

Additional strips from the same negative would cost 50 cents each if purchased individually, or 40 cents each if purchased in quantities of 10 or more. When printed legends and subtitles are required, prices are somewhat higher.

For best results in a film strip, photographs should be taken and selected with care. The best photographs tell an interesting story embodying only one idea; include only essentials grouped to emphasize the central point of interest; portray objects in their natural environment; suggest action and life whenever possible; and have principal objects as large as possible with inconspicuous background and clear foreground.

If assistance regarding film strips is desired, write to the Extension Service, U. S. Department of Agriculture, Washington, D. C.

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A CALIFORNIA SHEEP DEMONSTRATION

During the last three years a rapid spread of influence from the results of one ranch demonstration in flock selection in Mendocino county has been noted. The demonstration was started three years ago in cooperation with a sheepman who operates under conditions typical of many north-coast sheep ranches. Considerable time of both the assistant county agent and the extension specialist has been given to this one demonstration of a long-time breeding program involving flock selection and other flock management practices recommended by the Extension Service. Here the flock consisting of sheep of Merino-Rambouillet breeding has been carefully sorted. One top band has been established for the production of replacement ewe lambs. Desirable fleeces, and proper body conformation were important characteristics sought in ewes going into the top or foundation band. Careful attention was then given to proper type Rambouillet rams to mate with these ewes. The remaining ewes in the flock have been bred each year to Shropshire or Southdown rams, with all lambs from such matings being marketed. In the selection process all undesirable ewes have been culled and sold. Data on wool clip and lamb crop have been recorded. During the first two years of the demonstration, comparison was made between Shropshire and Southdown rams for production of market lambs. The two years' results showed that the Merino-Shropshire cross produced more pounds of lamb than did the Merino-Southdown cross, although the Southdown cross showed a slight advantage in quality. Three annual field days have been held at this demonstration ranch which have drawn an attendance of 800 persons from 7 counties. Results of this one demonstration have definitely affected breeding practices employed on a large number of ranches in the whole north-coast area, especially in Mendocino, Sonoma, Humboldt, and Marin counties.

--L. H. Rochford, in 1936 Annual Report.

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ANNUAL PLANS OF WORK

I cannot impress upon you too strongly the desirability of careful drafting of annual plans of work, not only for the value that these plans have for us in Washington in informing us regarding extension activities in progress in the States, and aiding us in the making of intelligent decisions on your plans and budgets, but also for the value to your workers of careful and, perhaps I should say prayerful, thinking through of their plans for the year and setting these plans down on paper. These annual plans of work should not be regarded as one extension director is quoted as saying, "We just date the old plans up a year to get the Federal money." On the other hand, we do not want to place so much emphasis on these annual plans that their preparation will become a more or less routine matter simply to satisfy us in Washington, or that they will become something from which you depart rather than follow in the actual progress of the work in the field. I hope that our suggestions for changes in the plans you submit will always be made with a view not to conforming to some set form of ours, but to assist you in developing new methods and lines of attack which will help you to do a better job.

There is a growing recognition of the need for joint planning by specialists so that they will contribute to a well-rounded program. The time has passed when the dairy specialist can set up plans wholly independent of the agronomist, or the nutrition specialist develop a plan which gives no consideration to the horticulturist, the dairyman, or others who contribute to home food production. There is still need, however, for more coordination of the work of the specialists looking toward the welfare of the entire farm and home, rather than toward the advancement of their own particular projects.

--From address of Dr. C.W. Warburton
at Spokane, Wash., May 24, 1937.

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HOG SCHOOLS IN INDIANA

Thirteen schools, including swine work in two short courses, were conducted as a major educational activity in swine extension projects in 1936. The total attendance at these schools was 2,967 persons. This was more than 600 less than the attendance in 1935, the reasons being extremely cold weather, icy roads and closed public schools in which the meetings were to be held. No hog schools were completely lost, however, on account of the weather. A strong interest on the part of farmers for information on feeding hogs and the growing of pigs for market was stimulated by the profits in hogs at the present time.

The hog school program consisted of illustrated lectures on the feeding of brood sows for vigorous pigs, managing and feeding pigs to remain thrifty from start to finish, home-made equipment, and the influence and economy of balanced rations in fattening hogs for market.

Paul Mitchell, marketing specialist of the department of farm management, assisted in all of the schools by giving lectures on the "Hog Outlook for Indiana" and "How Farmers Can Get the Most Out of the Hog Market."

Eleven State and local veterinarians gave unthrifty pig dissection demonstrations to show the effects of common internal parasites, pig flue, pneumonia, etc. These demonstrations are very effective in teaching the need for sanitation in the management and feeding of pigs. Before the conclusion of the schools, six to eight farmers were obtained in each county to demonstrate in their herds of spring pigs, the recommendations of the project. The interest in the schools was very good, and several county agents are applying a year in advance for the swine production project which includes a hog school. --John W. Schwab in Annual Report.

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MISSOURI SHEEP WORK

The outstanding phase of the sheep project in 1936 was the sale of 700 registered rams in 20 sales held in July and August, under very adverse weather and crop conditions. Despite such conditions, the rams were readily abosrbed at an average of $29.51 per head. County agents' reports show farmers to have purchased a total of 2,535 registered rams in 1936, an increase of 488 over 1935.

Preceding the sales, 20 district meetings were held by the specialists where a good registered ram and a grade ram were shown, along with some lambs sired by each. A lamb was also posted to show where stomach worms and tape worms are located, and control methods were discussed. County agents, as well as farmers, attended these meetings and following them the agents conducted from 3 to 6 similar meetings in their own counties. This program and 10 years' results from the use of better rams were largely responsible for the very satisfactory demand for rams offered at public auction.

Lamb grading has been a valuable agency for teaching farmers the importance of the various steps in the Missouri Plan of Sheep Improvement. Due to the shipment of lambs by truck, it is difficult to assemble lambs at a central point to be graded. In an attempt to continue lamb grading, a plan was set up in 12 counties to have the lambs graded on the farm. Local men were trained to do the grading. Weather conditions were not conducive to satisfactory development of early lambs, and the plan was successful in only two counties this year. --From Annual Report.

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RECENT PUBLICATIONS

(Only Federal publications are available from Washington. Others listed may be obtained in most instances from the institution or agency issuing them. Do not write Washington for other than U.S.D.A. publications).

Federal

"Conservation of the Western Range" - Agricultural Adjustment Administration, U.S.D.A., Washington, D.C., WR-Leaflet No. 103, pp. 9, illus. 4, Apr. 1937.

"The Feed Grain Situation" - A 31 page mimeograph, issued Aug. 26, 1937, by Bureau of Agricultural Economics, U.S.D.A., Washington, D.C.

"Livestock Received Direct by Packers at Chicago" - by Knute Bjorka, Bureau of Agricultural Economics, U.S.D.A., Washington, D.C., a 9 page mimeograph issued July 1937.

"Lumpy Jaw, or Actinomycosis" - by J. R. Mohler and M. S. Shahan, Bureau of Animal Industry, U.S.D.A., Washington, D.C., Circlar No. 438, pp. 10, illus., June 1937.

"A Method of Estimating the Weights of Beef and Dual-Purpose Cattle from Heart-Girth Measurements" - by Bradford Knapp, Jr., Bureau of Animal Industry, U.S.D.A., Washington, D.C., A.H.D. Mimeograph No. 24, pp. 4, Aug. 1937.

"The Prevention of Roundworms in Pigs," by B. H. Ransom, Bureau of Animal Industry, U.S.D.A., Washington, D.C. - Leaflet No. 5, rev., pp. 8, illus. 6, 1937.

"Effect of Different Methods of Grazing on Native Vegetation and Gains of Steers in Northern Great Plains" by W. H. Black, et al., Bureau of Animal Industry, U.S.D.A., Washington, D.C. - Tech. Bul. 547, pp. 19, March 1937.

"Life for our Talks" by Lester A. Schlup, Extension Service, U.S.D.A., Washington, D. C. - Misc. Ext. Pub. No. 41, pp. 20, illus., Aug. 1937.

"Statistical Results of Cooperative Extension Work, 1936" by M. C. Wilson, Extension Service, U.S.D.A., Washington, D.C. - Ext. Serv. Circ. 266, pp. 52, June 1937.

State

"Cheaper Feed Through Pastures" by E. D. Alexander - Georgia Extension Service Circular 267. Feb. 1937. illus.

"The 4-H Pig Club" by N. E. Nordby and E. M. Gildow - Idaho Extension Service Bulletin No. 103. Nov. 1936. pp. 73, illus. 41.

"Calcium and Phosphorus Supplements for Growing Swine," by H. H. Mitchell, et al. - Illinois Experiment Station Bulletin 434. May 1937. pp. 54. 24 tables.

"Value and Use of Oats in the Rations of Growing-Fattening Swine," by W. E. Carroll, et al. - Illinois Experiment Station Bulletin 436. June 1937. pp. 55. 27 tables.

"Swine Erysipelas," by G. L. Dunlap and Robert Graham - Illinois Extension Service Circular 471. Apr. 1937. pp. 13. illus.

"Raising Ton Litters in Indiana," by J. W. Schwab - Indiana Extension Service Bulletin No. 223. July 1937. pp. 8. illus. 8.

"Factors Affecting Beef Cattle Prices" by M. Paul Mitchell - Indiana Extension Service Bulletin No. 224. July 1937. pp. 8.

"Producing Native Lambs" by Claude Harper - Indiana Experiment Station Bulletin No. 419. Apr. 1937. pp. 15.

"The Breeding Season for the Farm Flock of Sheep," by R. C. Miller - Kentucky Extension Service Circular 301.

"An Economic Study of Livestock Farms in Maryland," by W. E. Bell, et al., - Maryland Experiment Station Bulletin No. 406. Nov. 1936. pp. 46.

"Economic Aspects of Lamb Feeding in Michigan," by K. T. Wright - Michigan Experiment Station Special Bulletin 284. June 1937. pp. 24.

"Home-Curing of Pork" by P. A. Anderson - Minnesota Extension Service Folder 40. Jan. 1935. pp. 3.

"Crossbred Swine," by Winters, et al., - Minnesota Extension Service Special Bulletin 180. Nov. 1936. pp. 12. illus.

"Cold Storage Lockers," by W. E. Morris, et al. - Minnesota Extension Service Special Bulletin 187. July 1937. pp. 15. illus.

"Animal Husbandry Judging Contest" by C. J. Goodell and Paul F. Newell - Mississippi Extension Service Circular No. 92. May 1937. pp. 14. illus.

"The Pituitary Glands of Ewes in Various Phases of Reproduction" by Virgene Warbritton and Fred F. McKenzie - Missouri Experiment Station Research Bulletin 257. pp. 59. illus. 28.

"Efficiency of Horses, Men, and Motors," by S. Brody and E. A. Trowbridge - Missouri Experiment Station Bulletin 383. May 1937. pp. 24.

"Cattle Ranching in Montana," by M. H. Saunderson and D. W. Chittenden - Montana Experiment Station Bulletin No. 341. May 1937. pp. 32.

"The Use of Native Grass in Producing Finished Cattle," by Marvel L. Baker - Nebraska Experiment Station Bulletin 307. June 1937. pp. 16.

"Systems of Farming and Possible Alternatives in Nebraska," by L. F. Garey - Nebraska Experiment Station Bulletin 309. June 1937. pp. 50.

"Creep Feeding Calves," - Nebraska Extension Service Circular No. 243. 1937. pp. 4. Mimeo.

"Beef Cattle Production in the Blackland Area of North Carolina," by J. E. Foster, et al., - North Carolina Experiment Station Bulletin No. 310. May 1937. pp. 14.

"Prevention of Losses Among Sheep," by Lee M. Roderick - North Dakota Extension Service Circular 147. Jan. 1937. pp. 19. illus. 3.

"Horse Bots, Life History and Control," by F. Gray Butcher - North Dakota Extension Service Circular 148. Jan. 1937. pp. 8. illus. 6.

"Beef, Slaughtering, Cutting and Curing" by P. F. Trowbridge and Albert Severson - North Dakota Extension Service Circular 150. Jan. 1937. pp. 44. illus. 40.

"Iodine for Livestock," by F. W. Christensen, et al., - North Dakota Extension Service Circular 151. Jan. 1937. pp. 4.

"Returns per Acre in Cattle Feeding,"
"Reducing the Amount of Corn and Increasing the Amount of Legume Hay in Rations for Fattening Yearling Steers,"
"Fattening Steer Calves,"
"Adding Supplement to Corn for Calves on Bluegrass Pasture,"

All contained in Ohio Experiment Station Bimonthly Bulletin No. 186, Vol. XXII. May-June, 1937.

"Permanent Pastures for South Carolina," - South Carolina Extension Service Bulletin 99. Mar. 1937. pp. 43. illus. 14.

"The Effect of Temperature and Time of Cooking on the Tenderness of Roasts," by Sylvia Cover - Texas Experiment Station Bulletin No. 542. June 1937. pp. 61.

"Fattening Beef Calves on Milo Grain Prepared in Different Ways," by J. M. Jones, et al., - Texas Experiment Station Bulletin No. 547. July 1937. pp. 32.

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